The invention described herein includes these and other various types of computer-readable storage media when such media contain instructions or programs for implementing the steps described below in conjunction with a microprocessor or other data processor. The invention also includes the computer itself when programmed according to the methods and techniques described herein.

[0055] For purposes of illustration, programs and other executable program components, such as the operating system, are illustrated herein as discrete blocks. It is recognized, however, that such programs and components reside at various times in different storage components of the computer, and are executed by the data processor(s) of the computer.

[0056] Although described in connection with an exemplary computing system environment, including computer 130, the invention is operational with numerous other general purpose or special purpose computing system environments or configurations. The computing system environment is not intended to suggest any limitation as to the scope of use or functionality of the invention. Moreover, the computing system environment should not be interpreted as having any dependency or requirement relating to any one or combination of components illustrated in the exemplary operating environment. Examples of well known computing systems, environments, and/or configurations that may be suitable for use with the invention include, but are not limited to, personal computers, server computers, hand-held or laptop devices, multiprocessor systems, microprocessor-based systems, set top boxes, programmable consumer electronics, network PCs, minicomputers, mainframe computers, distributed computing environments that include any of the above systems or devices, and the like.

[0057] The invention may be described in the general context of computer-executable instructions, such as program modules, executed by one or more computers or other devices. Generally, program modules include, but are not limited to, routines, programs, objects, components, and data structures that perform particular tasks or implement particular abstract data types. The invention may also be practiced in distributed computing environments where tasks are performed by remote processing devices that are linked through a communications network. In a distributed computing environment, program modules may be located in both local and remote computer storage media including memory storage devices.

[0058] In operation, the computer 102 such as computer 130 executes computer-executable instructions such as those illustrated in FIG. 4 to manipulate the target software 110 stored on the target computer-readable media 108 of the server 104.

[0059] The following examples illustrate the invention.

[0060] An exemplary software tool according to the invention such as software tool 606 allows OEMs to add mass storage device drivers to an offline image without rebooting the image or rebuilding the operating system. As a result, OEMs can reduce the number of images they maintain. The software tool 606 also increases the life span of the images because the images do not need to be rebuilt for new devices. In this example, the software tool 606 is a mass storage device installation tool (e.g., msdinst.exe). The software tool

606 allows OEMs to change existing offline images without booting into or recreating those images. The software tool 606 works with various offline images including, but not limited to, offline images that are accessible via a network such as network 106 and need new mass storage device drivers. For example, the software tool 606 can update drivers that already exist on the image. The software tool 606 also allows OEMs to update areas in the registry. In one embodiment, the software tool 606 executes in a minimal operating system environment.

[0061] The user creates a Sysprep.inf file with only the [SysprepMassStorage] section. In the [SysprepMassStorage] section, the user lists each new mass storage devices by a unique identifier (ID) that need to be added. The user accesses the software tool 606, for example, by installing the tool on a computer that is connected to a network such as network 106 and is running a minimal operating system. The user opens a command window and starts execution of the software tool 606 with command-line options. The command-line options include, but are not limited to, the path to the new Sysprep.inf file and the path to the directory that contains the image to be updated. For example, the following command may be used.

[0062] D:\i386\system32>msdinst.exe   A:\Sysprep.inf E:\Tools\Image1

[0063] In response to the command, the software tool 606 adds each ID from the new Sysprep.inf to a critical device database such as device database 608 enabling the mass storage device driver to boot the system. In addition, the software tool 606 installs the necessary driver files and configures those drivers to start as specified in the Sysprep.inf file. Further, the software tool 606 updates the Sysprep-clean section with all the new and updated registry information. Also, the software tool 606 searches Sysprep.inf for driver files in the file system related to the drivers identified in Sysprep.inf. In particular, the software tool 606 searches the regular and compressed versions of the driver's .inf files in the same directory as originally specified in the new Sysprep.inf. For example, supermsd.sys may be the .inf file for one of the drivers. The software tool 606 looks for supermsd.sys first and also looks for any compressed versions of supermsd.sys if they exist. The software tool 606 also searches all the files in the offline image's driver.cab, all the files in the offline image's driver.cab present in the source media, and the offline image's sourcepath directory for the regular and compressed versions of each driver's .inf file.

[0064] When introducing elements of the present invention or the embodiment(s) thereof, the articles "a,""an,""the," and "said" are intended to mean that there are one or more of the elements. The terms "comprising,""including," and "having" are intended to be inclusive and mean that there may be additional elements other than the listed elements.

[0065] In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

[0066] As various changes could be made in the above constructions, products, and methods without departing from the scope of the invention, it is intended that all matter contained in the above description and shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.